IBM Content Manager OnDemand for iSeries

IBM

Installation Guide

Version 5 Release 2

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> **Note**
>
> Before using this information and the product it supports, be sure to read the information in Appendix C, "Notices" on page 51.

Contents

About IBM Content Manager OnDemand for iSeries Installation Guide (SC41-5333)

This information shows you how to install the IBM Content Manager OnDemand for iSeries (OnDemand) licensed program. OnDemand (known as Report/Data Archive and Retrieval System or R/DARS in previous releases) lets you store large amounts of historical data onto disk, high-capacity optical volumes, or tape. It also provides quick access to stored data by on-line retrieval.

Use of the instructions and examples that are provided give guidance for performing the following tasks:

- To understand the installation requirements.
- To install OnDemand and verify the installation.
- To grant and revoke access to data.
- To understand the OnDemand overview.
- To define the OnDemand business environment.

By using this manual, you can optimize your media usage with a combination of disk, optical, and tape media.

Who should read this book

This book is for programmers or OnDemand administrators who are responsible for installing OnDemand to archive and retrieve information.

Prerequisite and related information

Use the IBM iSeries Information Center as your starting point for looking up iSeries technical information.

You can access the Information Center two ways:

- From the following Web site: `http://www.ibm.com/eserver/iseries/infocenter`
- From CD-ROMs that ship with your Operating System/400® order:

  iSeries Information Center, SK3T-4091-02. This package also includes the PDF versions of iSeries manuals, *iSeries Information Center: Supplemental Manuals*, SK3T-4092-01, which replaces the Softcopy Library CD-ROM.

The Information Center contains advisors and important topics such as Java™, TCP/IP, Web serving, secured networks, logical partitions, clustering, CL commands, and system application programming interfaces (APIs). It also includes links to related IBM Redbooks™ and Internet links to other IBM Web sites such as the IBM home page.

iSeries Navigator

IBM iSeries Navigator is a powerful graphical interface for managing your iSeries servers. iSeries Navigator functionality includes system navigation, configuration, planning capabilities, and online help to guide you through your tasks. iSeries Navigator makes operation and administration of the server easier and more

productive and is the only user interface to the new, advanced features of OS/400®. It also includes Management Central for managing multiple servers from a central system.

You can find more information on iSeries Navigator in the iSeries Information Center and at the following Web site:
`http://www.ibm.com/eserver/iseries/navigator/`

How to send your comments

Your feedback is important in helping to provide the most accurate and high-quality information.
- If you prefer to send comments by FAX, use either of the following numbers:
  - United States, Canada, and Puerto Rico: 1-800-937-3430
  - Other countries: 1-507-253-5192
- If you prefer to send comments electronically, use one of these e-mail addresses:
  - Comments on books:
    RCHCLERK@us.ibm.com
    IBMMAIL, to IBMMAIL(USIB56RZ)
  - Comments on the iSeries Information Center:
    RCHINFOC@us.ibm.com

Be sure to include the following:
- The name of the book.
- The publication number of the book.
- The page number or topic to which your comment applies.

Summary of Changes

This edition of *IBM Content Manager OnDemand for iSeries Installation Guide*, SC41-5333-03 contains new technical information. There may be some instances where changes were made, but change bars are missing. Significant changes to note are:

You can automate the loading of non-spooled file data such as PC files in IFS with the Start Monitor for OnDemand (STRMONOND) command using *DIR (directory) for the TYPE parameter. See Appendix A of the *IBM Content Manager OnDemand for iSeries Common Server: Administration Guide* for information on the STRMONOND command.

Additional keywords have been added to many OnDemand commands to more precisely identify the spooled file that the command will use. The new keywords correspond to the same new keywords available for OS/400 spooled file commands, allowing you to specify the system on which the spooled file was created, as well as the spooled file creation date and time.

Portable Application Solutions Environment (PASE), a product option of OS/400, is now an optional software prerequisite for the OnDemand Common Server. PASE is required if you plan to use the new OnDemand Common Server text search function for AFPDS documents. It is also possible that, in the future, other new functions of OnDemand may require PASE.

Additions and enhancements have been made to the sample programs for both Common Server and Spool File Archive. Sample programs for Common Server can be found in QSAMPLES2 source file in library QRDARS. Sample programs for Spool File Archive can be found in QSAMPLES source file in library QRDARS.

Record Archive provides commands and application programming interfaces (APIs) that let you store and retrieve data records on optical media for users who only require occasional access to historical data. At Version 5 Release 2, this product option is provided for existing Record Archive customers to use, but there are no planned enhancements. Documentation can be found in OnDemand publications from previous releases. Please talk to your software provider about other options, such as compressed DASD.

Chapter 1. Installation Requirements

IBM Content Manager OnDemand for iSeries, Version 5 Release 2 (OnDemand) is a software application that lets you store large volumes of data. You can also selectively retrieve that data, which may have been archived to disk, optical, or tape media.

Data can be automatically migrated from disk to optical, or disk to tape, and later retrieved. This lets you select the most cost-effective media for long- or short-term storage and retrieval, with the option of expiring data when it is no longer needed.

This section of the book lists the OnDemand hardware and software requirements, and gives you detailed installation, verification, and functional testing instructions.

The next chapters, beginning with Chapter 3, "Overview of OnDemand" on page 13, explain the responsibilities of the OnDemand administrator and the general user.

Security

You can combine standard OS/400 security with additional OnDemand access authorizations. Chapter 1 of the *IBM Content Manager OnDemand for iSeries: Administration Guide* (SC41–5325–06) explains the four options on the REPORT ADMINISTRATION MENU you can use to establish and maintain your security policies for reports. This chapter provides important details on Spool File Archive security that your OnDemand report administrator should take the time to read and understand. Chapters 2, 3, and 4 of the *IBM Content Manager OnDemand for iSeries: Administration Guide* explain security options for Object Archive, Record Archive, and AnyStore, respectively.

OnDemand for iSeries Hardware Requirements

To install OnDemand, you must have:
- An IBM AS/400® or iSeries processor with PowerPC® technology
- A 5250-type terminal or an intelligent workstation running the properly configured emulation

Optional Hardware
- An IBM 3995 Optical Library Dataserver

OnDemand for iSeries Software Requirements

You must have Version 5 Release 2 of OS/400 installed to support this version of OnDemand.

Optional Software

You can also use:
- Facsimile Support for iSeries
- Advanced Function Printing™ Utilities for AS/400
- Query for iSeries or DB2® Query Manager and SQL Development Kit for iSeries

- Backup Recovery and Media Services for iSeries (highly recommended if using an IBM tape library)

If you are working with Advanced Function Presentation™ (AFP™) reports with the Spool File Archive feature, reprinting also requires the Print Services Facility™ (PSF) feature of OS/400.

These optional software products must be compatible with the release level of your OS/400 operating system.

OnDemand for iSeries Print Processing Requirements

You must have Advanced Function Printing-capable printers to print AFP-resolved output. All other OnDemand printing can be done on any iSeries-attached printer.

OnDemand for iSeries Storage Requirements

To install OnDemand, you need this space on disk for the OnDemand library:
- Base - 13.5 megabytes (required for any other feature)
- Spool File Archive - 24.5 megabytes
- Object Archive - 3.4 megabytes
- AnyStore - 1.2 megabytes
- Server Support - 3.8 megabytes

The amount of application data storage you need depends on the amount of information you want to store, the size of the items, and your archive requirements.

OnDemand Client Workstation Requirements

See the *IBM Content Manager OnDemand: User's Guide*, SC27-0836 for workstation requirements and installation instructions. You download a PDF version of this publication from the Web at http:\\www.ibm.com\software\data\ondemand\400 (follow the links to **Library** to find the publication). To order printed copies of this publication, contact your IBM representative.

What You Receive from IBM

Your installation package consists of:
- The OnDemand distribution media with the:
  - Object libraries
  - Sample data
  - Sample user exit program source code
- *LPS: OnDemand for AS/400*
- *IBM Content Manager OnDemand for iSeries: Installation Guide* (SC41-5333-03).

Please contact your IBM representative for another valuable OnDemand resource, the *IBM Content Manager OnDemand for iSeries Administration Guide*, SC41-5325-06.

Chapter 2. Installing OnDemand

This chapter gives you installation instructions for all of the OnDemand features. Before you begin, verify that you have installed and tested the required hardware and software listed in Chapter 1, "Installation Requirements" on page 1.

OnDemand Installation Procedures

To install OnDemand, follow the instructions in the *Software Installation*, SC41-5120-06 book.

The licensed program number for OnDemand Version 5 Release 2 is **5722RD1**. The individual OnDemand features (which install separately) are as follows:

- ***BASE** for the Base Support (required for all others)
- **1** for Spool File Archive.
- **2** for Object Archive.
- **4** for AnyStore.
- **5** for Server Support.

Options 10, 11, and 12 are also available features of 5722-RD1, but do not apply to this publication. See the *IBM Content Manager OnDemand for iSeries Common Server: Planning and Installation Guide* (SC27–1158) for installation details.

The recommended way to install OnDemand is to use the Install licensed programs options from the Work with Licensed Programs menu (go licpgm). From the Install licensed programs screen, select all the OnDemand options you want to install.

Note: From the Install licensed programs screen, enter a 1 to Add an option, and then enter each of the features listed above that you have ordered (such as *BASE and then option 1, 2, 4, or 5). If you are installing option 5, download the latest Client software from IBM service on the Web at http://service.software.ibm.com/software/ondemand/fixes/v71.

If you install OnDemand with any other method, errors can occur when you attempt to use it.

IBM recommends that you order, load, and apply all PTFs available for OnDemand after successful installation of the licensed program. Refer to Informational APAR II13168 for a complete list of OnDemand Version 5 Release 2 PTFs. The informational APAR can be ordered electronically using the SNDPTFORD command, specifying II13168 for the PTF number. Be sure to read the PTF cover letters and follow any special instructions.

Installing the OnDemand client

For information on installing the OnDemand client on a Windows® workstation, see *IBM Content Manager OnDemand: User's Guide* (SC27–0836).

Verify the Installation

Install OnDemand and stay signed on as **QSECOFR**. Use the sample data that is included to ensure that the Spool File Archive, Object Archive, and Record Archive features are active, if applicable. (AnyStore does not require an installation verification test.) Test them by following the steps that are given for each feature. Then, if you are installing Spool File Archive, do the functional tests in "OnDemand Spool File Archive Functional Testing" on page 5.

If you encounter errors during installation or verification, review the OS/400 joblog from the installation. If you are not sure how to resolve the problem, contact your software support provider.

Spool File Archive Feature

This test captures three sample reports for later retrieval during the functional testing.
- Sample 1
  - While still signed on as **QSECOFR**, type **STRCDSRDAR** on the OS/400 command line. Press **F4**.
  - Type **CHECKSTMTS** for the *Report Name*.
  - Type **CHECKSTMTS** for the *Input File*.
  - Type **QRDARS** for the *Library*. Press **Enter**.
- Sample 2
  - While still signed on as **QSECOFR**, type **STRCDSRDAR** on the OS/400 command line. Press **F4**.
  - Type **TSTINV** for the *Report Name*.
  - Type **TSTINV** for the *Input File*.
  - Type **QRDARS** for the *Library*. Press **Enter**.
- Sample 3
  - While still signed on as **QSECOFR**, type **STRCDSRDAR** on the OS/400 command line. Press **F4**.
  - Type **TSTSEQ** for the *Report Name*.
  - Type **TSTSEQ** for the *Input File*.
  - Type **QRDARS** for the *Library*. Press **Enter**.

To run the functional tests for Spool File Archive, go to "OnDemand Spool File Archive Functional Testing" on page 5.

Object Archive Feature

This test verifies the proper installation of the feature:
- On the OS/400 command line, type **STRARCRDAR**. Press **F4**.
- When the prompt for the *Start Archive using OnDemand* appears, press **F12** to return to the command line screen.

Client/Server Feature

This verifies that you can start and end the jobs that run on the server. While still signed on as **QSECOFR** do the following:
- Type **STRTCPSVR *ONDMD** and press **Enter**.
- Type **WRKACTJOB JOB(QRLG*)** on the command line and press **Enter**. You should eventually see four jobs listed as active jobs. Use the **F5** key to refresh the

display if they do not all list initially. There should be one job that is named **QRLGMGR** and three jobs that are named **QRLGSVR**. Proceed to the next step when you see these four jobs.

- Type **ENDTCPSVR *ONDMD** on the command line and press **Enter**.
- After a few seconds, refresh the screen with the **F5** key. You should begin to see the four jobs end. Continue pressing the refresh key (**F5**) until all jobs have ended.

Installation Verification Completed

Your OnDemand installation is now verified.

If you have the Spool File Archive feature, we suggest that you do the functional testing explained in "OnDemand Spool File Archive Functional Testing".

OnDemand Spool File Archive Functional Testing

This section guides you through an OnDemand interactive Spool File Archive session. You can sign on and sign off and, using our examples, verify that report selection and retrieval are installed and working correctly. The sample data contains checking account statements that are captured during installation verification.

Testing OnDemand

While you are signed on as *QSECOFR*, and before you begin the test:

- Type **DSPLIBL** to display your library list.

  If *QSYS2* is not on your library list, add it by typing:

  ADDLIBLE QSYS2
- On the OS/400 command line, type **FNDRPTRDAR**.
- Press **Enter** to display Figure 1 on page 6:

Searching for a Stored Report

You can test the OnDemand Spool File Archive feature by searching for the sample checking account statement.

```
                       Specify Report Search                    ONDMD400
                                                          1/04/98  14:27:53

              000        DDDD                               D
             0   0      D    D                              D
             0   0 NNNN  D    D  EEE  MMM MM   AAAA NNNN    DDDD
             0   0N   N D    D E   E M M M A   A N   N D    D
             0   0N   N D    D EEEEE M   M A   A N   N D    D
             0   0N   N D    D E     M   M A   A N   N D    D
              000  N    N DDDD   EEE  M   M  M AAAA N    N  DDDD

 Type choices, press Enter.

 Report  . . . . . . . . . .   CHECKSTMTS   Name, generic*, F4 for list
 -OR-
 Report group . . . . . . . .  _____     Name, generic*, F4 for list

 Date range
   From  . . . . . . . . . . .  _____      YYYYMMDD
   To  . . . . . . . . . . . .  _____      YYYYMMDD



 F3=Exit    F4=Prompt    F12=Cancel
```

Figure 1. Specify Report Search

This screen lets you search for archived reports, such as checking account
statements. Your request in this test is for all reports named *CHECKSTMTS* that
have been archived using OnDemand.

- Type **CHECKSTMTS** in the *Report Name* field. Press **Enter**.

Only one checking account report is included in the sample. If there were more, all
the reports (usually with different dates) that matched the report name entered
would appear in Figure 2.

```
                       Select Report Result                     ONDMD400
                                                          1/04/98  14:29:08
 Type option, press Enter.
   1=Select


                               Sequence
 Opt    Report     Report date   number  Location  Text
        CHECKSTMTS 1990-12-19     001     DISK      Check Statements











                                                                   Bottom
 F3=Exit    F12=Cancel
```

Figure 2. Select Report Result

You can select a particular run of checking account statements from this list to see
the individual statements within the original spooled file. To do this:

• Type **1** in the *OPT* field next to the report you want to display. Press **Enter**, and Figure 3 is displayed.

```
                        Specify Document Search                    ONDMD400
                                                           1/04/98  14:40:45

Report  . . . . . . . . . . :  CHECKSTMTS
Report type . . . . . . . . :  DOC

Type choices, press Enter.

  Key values:                                        Required key length
    1. Account Number   . .  251*              _____   3 -  9.
    2. SSN / Tax-ID . . . .  _____        3 - 11.
    3. Cust Name    . . . .  _____        3 - 12.


  Search all report sequence numbers  . . . . . . . . Y         Y=Yes
                                                                N=No


    Report sequence number  . . . . . . . . . . . . .  001      1-999
  Date Range:
    From  . . . . . . . . . . . . . . . . . . . . . .  19901219   YYYYMMDD
    To  . . . . . . . . . . . . . . . . . . . . . . .  19901219   YYYYMMDD

F3=Exit    F6=Group search    F12=Cancel
```

Figure 3. Specify Document Search

You can use any search key on the SPECIFY DOCUMENT SEARCH screen to select a particular item (such as a checking account statement).

• Type **251*** in the *Account Number* field.

  Note: The asterisk indicates a partial search, requiring OnDemand to search the archive for all checking account statements that begin with 251.

• Press **Enter**, and Figure 4 on page 8 appears.

```
                         Work with Documents                    ONDMD400
                                                          1/24/98  14:10:41
 Report  . . . :  CHECKSTMTS  Check Statements (OnDemand Example)

 Type options, press Enter.
   5=Display   6=Print   7=Fax   A=Annotation


 Opt  Date    Account Number  SSN / Tax ID Cust Name    Ending Balance

  5  19901219 251000022       255-77-4993  KATIE ALLEN  $        0.48
     19901219 251000055       236-55-3387  DIANNE WIEST $    5,671.46
     19901219 251000261       253-26-8119  JESSICA LANG $    1,186.05
     19901219 251000287       230-88-4523  FORREST GUMP $    1,416.33
     19901219 251000352       225-88-9441  GRETA GARBO  $    3,777.69
     19901219 251000394       421-33-1886  MARK MIKEAL  $    1,344.67
     19901219 251000469       409-33-2298  JIM WHITMIRE $   21,016.47
     19901219 251000527       236-97-3309  KAREN ROSS   $       56.84
     19901219 251000535       236-22-1198  JEFF WHARTON $    4,941.67
     19901219 251000642       551-78-8837  JEFF LONGWAY $    5,356.19
     19901219 251000709       599-44-9007  CAROL ALLEN  $    8,770.45


                                                              More...
   F3=Exit    F12=Cancel
```

Figure 4. Work with Documents

Because you requested all checking account numbers that begin with 251, all
customers whose accounts begin with that number are displayed in the list of
search results. (If you include more keys, or the entire checking account number,
you can limit the search for a more immediate retrieval.)

In addition to the *SSN/Tax-ID* and *Cust Name* fields, another data item from the
statement is displayed—the *Ending Balance*. This field, known as a *display field*,
gives you additional information about the statements.

Find the entry for account 251000022. To view the actual checking account
statement for this sample account:

- Type **5** in the *OPT* field next to the document. Press **Enter**, and the top left part
  of the statement you retrieved is shown in Figure 5 on page 9.

```
                       Display Spooled File
File  .  .  .  .  .  :    CKSTMTPRTF                  Page/Line   1/2
Control  .  .  .  .  .      _____                    Columns    1 - 78
Find  .  .  .  .  .  .      _____
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+...
                 P. O. BOX 980
                 MARION, S.C.  29571
                                                             ____
 ACCOUNT NAME:   KATIE ALLEN
                                                            ____ ___
                 25 LABRADOR AVENUE
                 MARION S C                29571
PAGE 1   OF 1    NOVEMBER  20 - DECEMBER  19, 1990              ACCOUNT
                                                               CHECKS EN
_____
CONTENTS         SCN CHECKING                                  SOC.SEC.N
OF THIS
STATEMENT
                 _____
                 FOR INFORMATION ABOUT ACCOUNT ACTIVITY, CALL 423-6722.
                 FOR INFORMATION ON INSTANT CASH RESERVE, CALL 1-800-IBM-4YOU.
                                                              More...
F3=Exit   F12=Cancel   F19=Left   F20=Right   F24=More keys
Overprinting not displayed.
```

Figure 5. Display Spooled File

Successful access to this screen completes the test.

Testing the ATTN Key (To Print, Fax, or Work with Annotations)

You should also test the ATTN key, which allows you to print reports, send facsimiles (if your system has fax capabilities), or work with annotations. To do this, press **ATTN** while you are viewing a particular checking statement to display the PRINT/FAX DOCUMENT screen, Figure 6.

```
                    Print/Fax Document                     ONDMD400
                                                    1/04/98  15:05:45
 Pages in document . . . . . . :     1

Type choice, press Enter.
  6=Print   7=Fax   A=Annotation


Opt  Date    Account Number  SSN / Tax ID Cust Name   Ending Balance
 6 19901219 251000022        255-77-4993  KATIE ALLEN $       0.48

                                                            Bottom








 F3=Exit    F12=Cancel
```
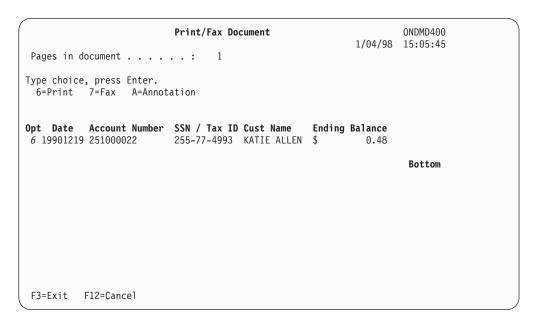
Figure 6. Print/Fax/Annotate Document

This test of the **ATTN** key uses the print function only. (You can test the facsimile and annotation functions by following the instructions in Chapter 8 of the *IBM Content Manager OnDemand for iSeries Administration Guide*, SC41-5325-06.)
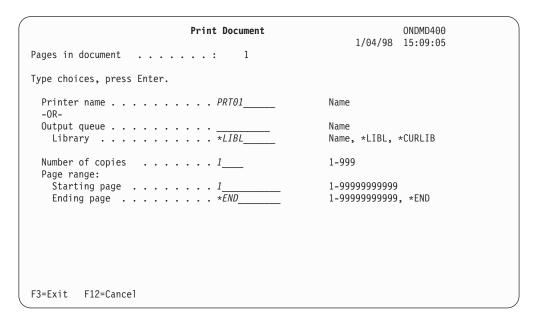
Press **Enter** to move to Figure 7.

```
                          Print Document                         ONDMD400
                                                           1/04/98  15:09:05
 Pages in document   . . . . . . . :     1

 Type choices, press Enter.

   Printer name . . . . . . . . . . PRT01_____           Name
   -OR-
   Output queue . . . . . . . . . . _____            Name
     Library  . . . . . . . . . . . *LIBL_____           Name, *LIBL, *CURLIB

   Number of copies   . . . . . . . 1____                 1-999
   Page range:
     Starting page  . . . . . . . . 1_____           1-99999999999
     Ending page  . . . . . . . . . *END_____           1-99999999999, *END




 F3=Exit    F12=Cancel
```

Figure 7. Print Document

Type your choices and press **Enter**. (For more detail, see Chapter 5 of the *IBM Content Manager OnDemand for iSeries Administration Guide*.)

This completes the ATTN key test for printing the sample checking account statement from checking account 251000022.

Functional Testing Completed

When you have finished testing the installation, press **F12**. This returns you to the previous screen. You can continue your exit by pressing **F12** at each screen, or you can access other functions.

- To sign off OS/400 completely, type **signoff** on the OS/400 command line.
- Press **Enter**.

Problem Determination Assistance

If an OnDemand program issues a **FILESTAT** error code due to an error that it cannot recover from, use the following table for problem resolution. For the complete list of these codes, refer to the *COBOL/400 Reference*, SC09-1813-00 book.

Table 1. Common FILESTAT codes:

FILESTAT code	Meaning
23	Record not found
35	File not found
39	Level check
91	Not authorized
9D	Record locked
9P	Commit failed

If you receive a **FILESTAT=9P**, issue the following command from a command line while signed on with sufficient authority:

CALL QRLCSTRJ PARM(xxx)

where **xxx** corresponds to the OnDemand feature that you are running. The possible values (which must be entered in *uppercase*) are:

- RLC - for the Base feature
- RLR - for the Spool File Archive feature
- RLO - for the Object Archive feature

Chapter 3. Overview of OnDemand

OnDemand for iSeries is a software application. This application allows you to select state-of-the-art media to replace microfiche, paper storage, and other iSeries data storage options. Using disk, optical, or tape media, you can:

- Store, retrieve, display, print, or send facsimiles of large volumes of print data (coded data).
- Store and retrieve a variety of other non-print data types.

This chapter familiarizes you with OnDemand, giving you a brief overview of OnDemand features, the terms you need to know, and what the basic screens look like.

What OnDemand Does

OnDemand has five optional features:

- **Spool File Archive**, which automates processing of spooled print data.
- **Object Archive**, which provides archive and retrieval capabilities for a variety of OS/400 objects.
- **AnyStore**, which provides Application Programming Interfaces (APIs) for storing and retrieving a wide variety of data types. These data types include, but are not limited to PC files, which make up the most commonly used files.
- **Server Support**, which offers a client/server alternative to search for and view data that is archived by Spool File Archive or AnyStore.

These functions are explained briefly here, with more detailed information in the appropriate chapters of this book.

Spool File Archive

Use this feature to automate spooled print data tasks, such as report capture, segmentation, compression, indexing, and storage migration management.

You can use commands or on-line menus to quickly display or print selected pages of a report. You can even reprint the entire report. Because you determine search criteria when you create your reports, you can direct your search to selected data only, eliminating searches through irrelevant or sensitive data.

The powerful compression function increases your effective storage space. Migration management extends it further by automatically migrating data to optical or tape media.

OnDemand can use either its own tape management system or the Backup Recovery and Media Services for iSeries(BRMS).[1]

Working with OS/400 print and fax facilities, OnDemand can print or send facsimiles with original quality output, including Advanced Function Printing features.

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1. Refer to the *Backup Recovery and Media Services for iSeries* for data archives and backups to tape.

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Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide* explains this feature in detail.

Object Archive

This feature archives objects to disk, optical, or tape media, and manages multiple generations of archived objects. You can store OS/400 objects—such as database files, program source files, or programs—on cost-effective optical or tape media in a compressed format. OnDemand can retrieve these compressed objects from optical or tape media.

Chapter 2 of the *IBM Content Manager OnDemand for iSeries Administration Guide* explains this feature in detail.

AnyStore

This feature provides capabilities to store and retrieve a wide variety of data types (such as workstation files, for example), allowing the powerful storage management functions of OnDemand to handle data above and beyond the typical spooled file, object, or data record environments that the other OnDemand features address. Similar to the other features of OnDemand, a great advantage of AnyStore is the ability to use optical or tape media (as well as disk) for the various data types which exist throughout your network.

OnDemand provides application programming interfaces (APIs) to develop archive and retrieval applications or to enhance existing applications which need access to the archived data. Spool File Archive storage management commands and menus are used for many of the administrative functions for AnyStore, including definitions and migration characteristics.

Chapter 4 of the *IBM Content Manager OnDemand for iSeries Administration Guide* explains this feature in detail.

Client/Server

This support provides full client/server search and retrieval of Spool File Archive and AnyStore data for OnDemand end-users. Chapter 5 of the *IBM Content Manager OnDemand for iSeries Administration Guide* explains this support in detail.

Retrieving Data

You can retrieve an archived item by using search criteria that is defined when that item is stored. You can retrieve a specific report, archived object, or data record.

Printing Data

With OnDemand, you can print a report or selected pages of a report, either interactively or in batch. You can also send facsimiles, using facsimile-enabling software.

Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide* further explains this part of the Spool File Archive feature.

System Security

OnDemand provides several ways for you to protect your data, in addition to the standard OS/400 security. Within the Spool File Archive feature, you can limit access to data by selectively granting user authority to any of the following applications and reports.

- OnDemand application.
- Individual reports.
- Groups of reports.
- Individual key values within reports.

Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide* explains the four options you can use to establish and maintain your security policies for reports. This chapter also provides greater detail on how Spool File Archive security works. Chapters 2 and 3 of the *IBM Content Manager OnDemand for iSeries Administration Guide* explain security options for object and AnyStore archives, respectively.

Managing Optical and Tape Media

One of the benefits of using OnDemand for your data archives is that you never have to specify a particular optical volume or tape volume when storing or retrieving your data. OnDemand manages this for you. You define a migration policy for reports or objects that have similar storage requirements (how long to keep and where). Each migration policy then refers to a group of optical or tape volumes that can be used for those reports or objects. When OnDemand stores your data, it knows the volume to which it should write. Similarly, when OnDemand retrieves your stored data, it knows what specific optical or tape volume to read.

OnDemand Terms and Definitions

Before you begin, you can familiarize yourself with the terms used in this book. They are:

absolute processing
> This is the search method you use when report date, segmentation, or index information is consistently located on the same line and in the same column for each report segment.

application program interface (API)
> A program or command supplied by IBM to enhance the capabilities of a software product.

BRMS Optionally, you can use the Backup Recovery and Media Services for iSeries (BRMS) when when you transfer data to and from tape. Otherwise, use OnDemand to manage your OnDemand tapes.

bundle
> When one spooled file contains several completely different OnDemand reports, OnDemand can split the bundle into separate reports and store them individually, by defining an unbundle report definition (see *unbundle reports*).

compression
> Compression removes blanks and repetitive strings from the data so you can store more data in less space. Depending on the nature of the data, compression ratios can be from 2:1 to 17:1, or more.

display fields
Like keys, display fields appear to the user on the selection list of documents to view, print, or fax. Unlike keys, users cannot search by display fields. They are for informational purposes only.

document reports
These are reports that can be segmented into unique, separately-retrievable items, such as checking account statements or invoices. The abbreviation for this report type is **DOC**.

hitlist The list of documents that meet the specified search value.

indexes
Also called keys, indexes are used for search and retrieval. Two, *Report Name* and *Date*, are mandatory, and you can use up to five others.

keys Also called indexes, keys are used for search and retrieval. Two, *Report Name* and *Date*, are mandatory, and you can use up to five others.

migration
This is the movement of data to a different storage medium; for example, moving a report from disk to optical media.

migration policy name
A migration policy name describes the migration and expiration characteristics of the items assigned to it. OnDemand provides definitions for report migration policies (for Spool File Archive and AnyStore) and object migration policies (for Object Archive).

no-index reports
These reports have neither unique keys nor a logical range index. The abbreviation for this report type is **NODX**.

objects
This is the common term for OS/400 entities, such as files, programs, or commands.

Object Management Cycle
This controls movement of an archived object or set of archived objects through the storage hierarchy (moving an archive from disk to optical media or from disk to tape).

page reports
These reports can be logically indexed by a range of values based on the sort order of the data within the report. The abbreviation for this report type is **PAGE**.

record This is one entry within a data file. For OnDemand reports, it represents one line of print data.

reference string
A reference string value is a string of one or more characters beginning at a known column on a report. It is used to specify the location of an index (key), segmentation value, or report date when such data does not appear on the same line of each page.

report occurrence
Each time you store a report into OnDemand, you create a report occurrence. If you run invoices, for example, three times a day, and store each run in OnDemand, then you have three occurrences of invoices for that day. Each report occurrence for a particular day will have a unique sequence number. Within OnDemand, a report occurrence is often referred

to by name, using the format of **YYYYMMDD.SEQ** (which is the report date followed by report sequence number).

report overlay
You can create character-based screen overlays, which combine with the spooled data when displayed. You can include an overlay when you print the data or send a facsimile. A report overlay is **not** the same as an AFP overlay.

Report Management Cycle
This controls movement of an archived report through the storage hierarchy (moving an archive from disk to optical media or disk to tape).

segmentation
This splits the spooled file into separate items, such as individual invoices, that can later be retrieved individually.

storage groups
Use these for reports, objects, or data records that share similar characteristics and should reside on segregated optical volumes.

unbundle reports
When one spooled file contains several completely different reports, the spooled file is called a bundle of reports (see *bundle*). OnDemand can split the bundle into separate reports and store them individually, using an unbundle report definition. The abbreviation for this report type is **UBND**.

Getting Help

You will find either general help that describes the tasks you can do on a screen, or help for a specific entry field.

For an Entire Screen

Move the cursor to the title area on the screen and press **F1**. OnDemand displays the purpose of that screen. The example, Figure 8 on page 18, indicates the screen for which you are requiring help.

```
                    Specify Report Search                    ONDMD400
                                                       1/24/98  14:11:55

             OOO       DDDD                              D
            O   O      D   D                             D
            O   O NNNN D   D EEE  MMM MM   AAAA NNNN    DDDD
            O   O N  N D   D E  EM M  MA   A  N N  N    D   D
            O   O N  N D   D EEEEE M  MA   A  N N  N    D   D
            O   O N  N D   D E     M  MA   A  N N  N    D   D
             OOO  N  N DDDD  EEE  M   M   AAAA N  N    DDDD

  Type choices, press Enter.

  Report  . . . . . . . . . .              Name, generic*, F4 for list
  -OR-
  Report group . . . . . . . .             Name, generic*, F4 for list

  Date range
    From . . . . . . . . . . .             YYYYMMDD
    To . . . . . . . . . . . .             YYYYMMDD



  F3=Exit    F4=Prompt    F12=Cancel
```

Figure 8. Specify Report Search

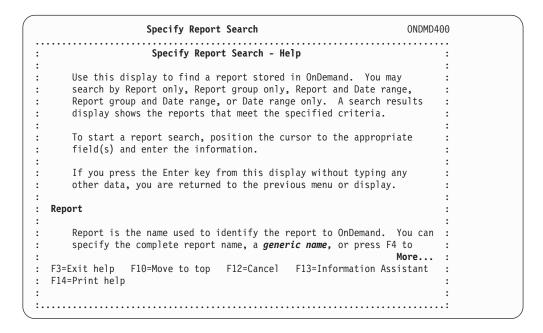Figure 9 is the result of your request for help on the entire screen.

```
                    Specify Report Search                    ONDMD400
  ...........................................................................
  :                    Specify Report Search - Help                         :
  :                                                                         :
  :     Use this display to find a report stored in OnDemand.  You may      :
  :     search by Report only, Report group only, Report and Date range,    :
  :     Report group and Date range, or Date range only.  A search results  :
  :     display shows the reports that meet the specified criteria.         :
  :                                                                         :
  :     To start a report search, position the cursor to the appropriate    :
  :     field(s) and enter the information.                                 :
  :                                                                         :
  :     If you press the Enter key from this display without typing any     :
  :     other data, you are returned to the previous menu or display.       :
  :                                                                         :
  :   Report                                                                :
  :                                                                         :
  :     Report is the name used to identify the report to OnDemand.  You can :
  :     specify the complete report name, a generic name, or press F4 to    :
  :                                                            More...       :
  :  F3=Exit help   F10=Move to top   F12=Cancel   F13=Information Assistant :
  :  F14=Print help                                                         :
  :                                                                         :
  :.........................................................................:
```

Figure 9. Specify Report Search - Help

For a Field

OnDemand screens display underscores for fields in which you enter information. You can enter as many characters as the underscores allow. For an explanation of a field and your choices for valid entries, move the cursor to that field and press **F1**.
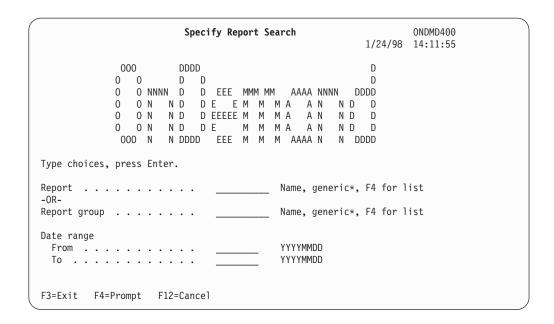
```
                        Specify Report Search                ONDMD400
                                                       1/24/98  14:11:55

             OOO       DDDD                              D
            O   O      D   D                             D
            O   O NNNN D   D  EEE  MMM MM   AAAA NNNN    DDDD
            O   O N  N D   D  DE   E M M M A   A N   N   D   D
            O   O N  N D   D  D EEEEE M   M A   A N   N  D   D
            O   O N  N D   D  DE    M   M M A   A N   N  D   D
             OOO  N  N DDDD   EEE  M   M M AAAA N   N    DDDD

   Type choices, press Enter.

   Report  . . . . . . . . . .   _____   Name, generic*, F4 for list
   -OR-
   Report group  . . . . . . .   _____   Name, generic*, F4 for list

   Date range
     From  . . . . . . . . . .   _____     YYYYMMDD
     To  . . . . . . . . . . .   _____     YYYYMMDD


   F3=Exit   F4=Prompt   F12=Cancel
```

Figure 10. Specify Report Search

A screen insert, similar to the insert in Figure 11 appears.

```
                        Specify Report Search             ONDMD400
          ........................................................
          :                     Report - Help                    :
          :                                                       :
          :  Report is the name used to identify the report to    :
          :  OnDemand.  You can specify the complete report name, a :
          :  generic name, or press F4 to get a list of the available :
          :  reports.                                             :
          :                                            Bottom     :
          :  F2=Extended help   F3=Exit help        F10=Move to top :
          :  F12=Cancel   F13=Information Assistant   F14=Print help :
   Type choices, :                                                 :
          :........................................................:
   Report  . . . . . . . . . .   _____   Name, generic*, F4 for list
   -OR-
   Report group  . . . . . . .   _____   Name, generic*, F4 for list

   Date range
     From  . . . . . . . . . .   _____     YYYYMMDD
     To  . . . . . . . . . . .   _____     YYYYMMDD


   F3=Exit   F4=Prompt   F12=Cancel
```

Figure 11. Action Field Help

To exit a help screen and return to the screen you are using, press **F3** or **F12**.

OnDemand Main Menu

This is the main OnDemand menu. Subsequent chapters explain the options and the features that use them. (Some menu options do not appear if you have not purchased the particular feature to which they belong.)

To access this menu, type **GO ONDEMAND** or **GO RDARS** from any OS/400 command line.
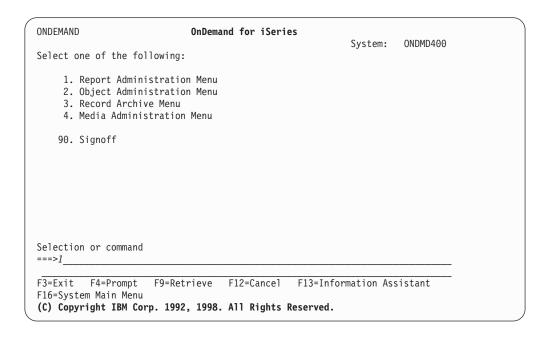
```
ONDEMAND                        OnDemand for iSeries
                                                    System:   ONDMD400
  Select one of the following:

      1. Report Administration Menu
      2. Object Administration Menu
      3. Record Archive Menu
      4. Media Administration Menu

     90. Signoff






  Selection or command
  ===>1_____
  _____
  F3=Exit   F4=Prompt   F9=Retrieve   F12=Cancel   F13=Information Assistant
  F16=System Main Menu
  (C) Copyright IBM Corp. 1992, 1998. All Rights Reserved.
```

Figure 12. OnDemand for iSeries Main Menu

Using Fast-Path Commands

You can use fast-path commands to directly access any of the four main menu options or a list of all OnDemand commands, without stopping at the main menu.

On the OS/400 command line, type:

GO RDARSRPT
> To access the REPORT ADMINISTRATION MENU.

GO RDARSOBJ
> To access the OBJECT ADMINISTRATION MENU.

GO RDARSRLA
> For the RECORD ARCHIVE MENU.

GO RDARSM
> To access the MEDIA ADMINISTRATION MENU.

GO CMDOND or GO CMDRDAR
> To access a list of all OnDemand commands.

Chapter 4. Defining the OnDemand Business Environment

As the system administrator, you are responsible for the smooth transition from your current storage and retrieval methods to OnDemand. This chapter helps you plan and organize your move by explaining the components of the archive and retrieval process. It also gives you suggestions on how to use them to your best advantage.

Each topic includes a reference to menus, screens, and fields that you use for each item.

Establish Business Policies

To ensure conformance with management's business goals and consistency among your end users, you can establish a formal policy that lists requirements for your archives. This can include retrieval requirements, how often you might retrieve items, when to move them to long-term storage, and the legal aspects of their retention times.

As you read each topic in this chapter, we suggest that you outline your plan. Discuss your plan with your programmers (who write and maintain your application programs), your end users (who respond to customers), and with management.

Using OnDemand, you will find that your completed policy can be a valuable organizational tool that you can use to monitor your processes. As an active document, you can alter OnDemand as your business changes, used in part as a training tool for end users, and as a disaster recovery aid.

Design User Guidelines

End users can be of great assistance to you when you determine keys, segmentation, and other production values for OnDemand archives. For report archives, for example, we suggest that you create a chart for each type of report, asking your end users for their input. Not only can this give you expert advice on how to optimize performance with your new OnDemand system, but it can also generate enthusiasm in your new users.

This chapter includes a "Sample Customization Chart for Reports" on page 31 to help you start. You can alter it to suit *your* reports.

Select Your Archives

Your first task in preparing to move to OnDemand is to determine what you want to archive. Depending on the OnDemand feature you have purchased, you can archive:

- Reports
- Objects
- Data records
- IFS files (from PC applications, for example), database file members, entire spooled files, or data from program buffers

Identifying Reports for Spool File Archive

If you have purchased the Spool File Archive feature of OnDemand, you need to decide which reports to archive. They can be invoices, personnel listings, customer account statements, or any other item in your business.

Make a list of report types and their relationships to decide how they are archived and retrieved. For example, your customer might have vehicle and homeowner's insurance. You can store both policy types as one report, or store each policy type separately and then group the reports together by putting both into a report group. Later, your end users can retrieve either document by individual policy number or by customer name.

Identifying Objects for Object Archive

If you have purchased the Object Archive feature of OnDemand, you can store a variety of OS/400 objects. When you store multiple copies (generations), OnDemand manages them all for you, letting you retrieve specific ones when you need them.

For example, you might have an application that runs a month-end total of a large number of transaction records into summary totals. Then it adds or subtracts these totals to or from the appropriate General Ledger accounts. Your iSeries disk space might be insufficient to save these detail transactions; however, with OnDemand, you can archive this data, to free disk space. You can retrieve this data back to disk later, if necessary.

Identifying Items for AnyStore

If you have purchased the AnyStore feature, you can store items such as IFS files, database members, entire spooled files, or data from program buffers using the AnyStore APIs. This data can be archived to disk, optical, or tape, using the same administration and storage management functions as Spool File Archive (which is a prerequisite).

The most common use of AnyStore is for PC files that are stored on the iSeries as IFS files. AnyStore is a great way to store large objects that would take significant amounts of workstation disk storage. The data can be archived using AnyStore. Later it can be retrieved from disk, optical, or tape, and placed back in a location specified by your own application program.

Retention and Access Requirements

After you determine the types of items you want to archive, you need to establish their access and retention requirements.

Analyze your items to determine whether they require frequent retrieval. For example, you might access internal monthly accounting records frequently while they are active, and then you may archive them for use at year-end. You might keep customer account statements active for immediate response to inquiries; you may archive one-time purchases within a week.

Consider end-user response to customers. For one type of record, immediate, on-line response might be required for the life of the data; other records can be satisfactorily retrieved later. OnDemand lets you define these requirements individually.

Your items might be retrieved by using keys or indexes that are unique to each category. For example, a biweekly summary report of inventory orders can be archived and retrieved by date. A personnel record might be archived only upon termination of that employee, and retrieved by employee serial number.

Analyze your items carefully to ensure that the search keys you select provide you with the fastest retrieval time.

Create a Disaster Recovery Plan

We recommend that you establish a backup and recovery plan for your valuable archives. Although your customer information is the basis of your business, your financial records, program applications, inventory, and other data are also vital to your recovery after a disaster.

You should create and maintain backup copies of active information on a regular schedule, and ensure that your long-term storage is protected from loss or damage.

See Appendix D of the *IBM Content Manager OnDemand for iSeries Administration Guide* for details.

Adhere to Legal Requirements

There might be legal requirements (and your own internal requirements) that dictate the retention time for certain documents. Audit trails might also need documentation and monitoring for conformance to laws. OnDemand lets you establish retention characteristics for your unique requirements.

OnDemand maintains an audit log of unauthorized attempts to access archived reports. Other logs are included on the iSeries system; check your iSeries reference manuals for more information.

Select the Storage Media

As you analyze your data and assign retention periods, select the appropriate storage media for each. See Chapter 6 of the *IBM Content Manager OnDemand for iSeries Administration Guide* for instructions on how to work with tape and optical media.

Some reports might not need long-term storage; some can reside on disk (DASD) until they are migrated automatically to tape or optical media. For optimal retrieval time, or for very short retention periods, store your items on disk.

For example, after creating invoices, you might require frequent, immediate access to them. However, legal or internal requirements might dictate longer retention. You can set automatic migration to tape or optical media after immediate access is no longer necessary.

Storing on Disk Only

If you use disk storage only, you do not need to set up the optical or tape media.
- If you store spooled files on disk, the Spool File Archive feature of OnDemand segments, indexes, and compresses the data.
- The Object Archive feature compresses OS/400 objects and lets you manage multiple generations of those objects on disk.
- Record Archive lets you store optical files on disk. You can do this when you test your application, before you actually write data to optical media.

Storing on Optical Media

If you use optical media in any capacity within OnDemand, choose one of the three following options:

- WORM (Write Once, Read Many).
- Rewriteable optical cartridges.
- A combination of the two (for use in multi-function optical libraries).

You can use an optical library that is LAN-attached or directly attached to your iSeries. You must have one of the two installed and configured before you can use optical media with OnDemand. It does not matter which one of the attachment choices you use.

When you select optical media storage, you can organize your data on optical volumes in several ways:

- You can group related items into storage groups, placing them on separate sets of optical volumes. These sets of optical volumes are given a name, so that OnDemand can direct specific archived data to specific volumes during migration. For example, you can direct all of your accounting data to one set of optical volumes and all of your sales data to a different set of optical volumes.
- You can choose to place your data on one set of optical volumes. This choice allows you to use the sample storage group (*RDARSOPT*) that is shipped with OnDemand.

If you use rewriteable optical media, you should consider a reuse policy for space that is made free by deletions or expirations. See Chapter 6 of the *IBM Content Manager OnDemand for iSeries Administration Guide* for screens and further details.

To use optical media, you must first initialize the optical platters, then add them to the OnDemand optical inventory and specify the storage group to which they belong.

Establish an Optical Volume Reuse Policy

Before you store data on optical media, you should consider the retention and expiration requirements for each report. For example, you might keep invoices for 30 days on disk, then migrate them to optical media and expire them after two years. When you expire the invoices, you can reuse the space.

To define the way you want OnDemand to reuse your freed optical space:

- Access the ONDEMAND FOR ISERIES Main Menu. See Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide*.
- Select option 4, MEDIA ADMINISTRATION MENU.
- Choose option 10, WORK WITH OPTICAL STORAGE GROUPS.

  Chapter 6 of the *IBM Content Manager OnDemand for iSeries Administration Guide* discusses in detail the volume capacity and thresholds.

Create Optical Storage Groups

To store reports on optical media, you must create one or more optical storage groups. You can group all of your optical volumes into one storage group, or separate them into multiple storage groups to write different reports to different optical volumes.

The storage group (and therefore the set of optical volumes) is specified in each report's migration policy definition. By associating a report definition with a migration policy, you determine the set of optical volumes to which that report will migrate.

- Access the ONDEMAND FOR ISERIES Main Menu. See Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide*.
- Select option 4, MEDIA ADMINISTRATION MENU.
- See Chapter 6 of the *IBM Content Manager OnDemand for iSeries Administration Guide* for item to choose.

Storing on Tape Media

If you use tape media and you use OnDemand to manage it, you must define the tape drives to OnDemand. Then initialize the tapes—with the appropriate OS/400 command—and add them to the tape inventory. See Chapter 6 of the *IBM Content Manager OnDemand for iSeries Administration Guide* for more information.

If you have the IBM Backup Recovery and Media Services for iSeries (BRMS) software installed, it can manage your tapes for you. Initialize the tapes—with the appropriate OS/400 command—then set up the BRMS environment to include your OnDemand tapes.[2]

Write Your Migration Policy

When you have chosen the media environment, establish guidelines for Spool File Archive, Object Archive, and AnyStore migration (as applicable).[3]

You can define different migration characteristics—such as the time an item should stay on disk or on optical media—for each item you are archiving. Generally, however, you analyze the migration requirements for all your archive items and then define a limited number of OnDemand migration policies. Migration policies include parameters for number of days on disk, tape, or optical media, expiration requirements, and others.

There are two storage management cycles that OnDemand uses to migrate your data:

- Reports and AnyStore Items

  Unless you run the Report Management Cycle, *no data will move from disk to optical media or from disk to tape*, and *no data will expire*.
- Objects

  Unless you run the Object Management Cycle, *no archived objects will move from disk to optical media or from disk to tape*.

You should run the appropriate cycle on a regular basis to ensure timely movement and expiration of data, which can free space for new data. Some OnDemand installations run a storage management cycle nightly; others, during the weekend. (You can automate this by using the job-scheduler commands on your iSeries.)[4]

---

2. Refer to the *Backup Recovery and Media Services for iSeries* manual.

3. Record Archive files are defined to media when they are created, and are not migrated.

4. Refer to the *Work Management* manual.

Set Up Your Reports

Define Spool File Archive Reports

To define these reports, you must:

- Copy your spooled file data into a physical file so you can determine the line and column locations of particular data within the report.
- Identify the segmentation and key values from the spooled file data.
- Assign a migration policy definition to the reports to establish migration criteria and expiration criteria. (Report migration policies contain migration and retention characteristics for reports.)
- Determine special printing requirements for reports with unique characteristics.
- Create report overlays (optional).

Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide* explains the REPORT ADMINISTRATION MENU, its screens, and their fields. You can also use the OnDemand Graphical Administration Tool, which is a plug-in for Operations Navigator, to define Spooled File Archive reports. Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide* contains more information on this tool.

Store Reports

After you define a report, your next step is to store it, archiving the spooled data by using the report definition. There are several ways to do this. For more information refer to Chapter 1 of *IBM Content Manager OnDemand for iSeries Administration Guide*:

- Issue the report store command (**STRCDSRDAR**) from the command line.
- After you set up your reports, you can automate the process by using the OnDemand monitor to capture your reports as they arrive in an output queue. Depending on information in the *Spooled File Name, Form Type,* or *User Data* field of the spooled file, OnDemand can automatically capture the report. This makes it available to end-users as soon as it is successfully processed. Generating reports during a nightly process, makes them available to your end users at the start of the next business day, without intervention from an operator.
- You can also capture OnDemand reports automatically by adding the report capture command (STRCDSRDAR) to your existing control language (CL) programs. This can make the report available shortly after creating it.

Define the Object Archives

Chapter 2 of the *IBM Content Manager OnDemand for iSeries Administration Guide* explains how to define, archive, and retrieve archived objects.

An example of an object archive is a detail transaction file that is processed at the end of each month, then purged from your application database file. You can archive this file every month, creating a new generation each time, and then retrieve each generation back to disk when you need it.

Objects are compressed and formatted as archived objects and stored on disk. You *must* run the OnDemand Object Management Cycle (see "Write Your Migration Policy" on page 25) to move an archived object to tape or optical media from disk.

Define AnyStore Items

Much like Spool File Archive, AnyStore items require a report definition to identify various characteristics of the data. To define an AnyStore item, you must:

- Determine the type of data to be archived (IFS files, database file members, entire spooled files, or data from program buffers).
- Identify the key values required for later retrieval of the data.
- Assign a migration policy definition to the reports to establish migration and expiration criteria.

Create AnyStore definitions by using the same administration screens as the Spool File Archive report definitions, as described in Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide*. Chapter 4 of the *IBM Content Manager OnDemand for iSeries Administration Guide* describes some important details that differ from Spool File Archive. You can also use the OnDemand Graphical Administration Tool, which is a plug-in for iSeries Navigator, to define Spooled File Archive reports. Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide* contains more information on this tool.

Add AnyStore APIs to Application Programs

After you define your AnyStore items, the next step is to write the programs to store and retrieve the data. The retrieved data returns from the archive in the same format in which it was stored. This allows your programs to place it in the most usable location for further processing. Chapter 4 of the *IBM Content Manager OnDemand for iSeries Administration Guide* describes in detail the APIs that accomplish the storage and retrieval of your data.

Establish Security

When you set up your archives, determine the level of security required to protect them.

For Spool File Archive, security is mandatory at the OnDemand application level and at the individual report level, and optional at the report group and key levels. For OnDemand system administrators who need to access administrative files and commands, add the **QRDARSADM** user profile as a group profile to each OnDemand system administrator's user profile. **QRDARSADM** can be the first group profile **(GRPPRF(QRDARSADM))** or any one of the supplemental group profiles **(SUPGRPPRF(QRDARSADM))**.

Object Archive also requires application-level authority. In addition, security authorization is checked both at the time of archive and at the time of retrieval.

Record Archive security also requires application-level security, and lets you extend the authority of your disk model file to the optical file. See the appropriate section below.

AnyStore security is mandatory at the application level and at the individual AnyStore item (report) level, and optional at the group and key levels.

OnDemand Application-Level Security

You can grant application-level security by individual OS/400 user profile, by group profile, or with a combination of the two.

- Access the ONDEMAND FOR ISERIES Main Menu. See Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide*.
- Select option 1, REPORT ADMINISTRATION MENU.
- Choose Option 10.

This authorization is done only once for each user or group profile.

Other access authorizations are:
- Option 11. Edit/Authorize OnDemand Report Users
- Option 12. Edit/Authorize OnDemand Report Group Users
- Option 13. Work with Key Security

Report-Level Security

Authorization must be given to any user who needs to access a specific report. Consider the job responsibilities of your OnDemand users to determine who should be allowed to access which archived reports. You can request end-user management or the OS/400 Security Administrator to grant these authorizations for you.

To authorize users:
- Access the ONDEMAND FOR ISERIES Main Menu. See Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide*.
- Select option 1, REPORT ADMINISTRATION MENU.
- Choose Option 11.

Report-Group-Level Security

If you use report groups, you must grant access authority to your end users.

To authorize users:
- Access the ONDEMAND FOR ISERIES Main Menu. See Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide*.
- Select option 1, REPORT ADMINISTRATION MENU.
- Choose Option 12.

Key-Level Security

You can grant key-level security to end users who work with document-type reports that contain sensitive or confidential information.

For example, you might archive payroll information that is indexed by department number. The manager of department 123 (user profile NANCY) can be authorized to access only the information in her department. The manager of department 456 (user profile PAUL) can access only the segment of the report that contains data about his own department.

To grant key security:
- Access the ONDEMAND FOR ISERIES Main Menu. See Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide*.
- Select option 1, REPORT ADMINISTRATION MENU.
- Choose Option 13.

Object Archive Security

Object Archive requires application-level authority. Security authorization is checked both at the time of archive and at the time of retrieval.

AnyStore Security

AnyStore security is similar to Spool File Archive security as described above.

Enter Your Data into OnDemand

You have completed the planning stage of migration to OnDemand, and charted your reports (using the "Sample Customization Chart for Reports" on page 31). The next sections tell you which chapters contain the screens you use to enter your data.

Set Up the Media

Chapter 6 of the *IBM Content Manager OnDemand for iSeries Administration Guide* explains how to work with tape devices and volumes, and optical volumes and storage groups.

- Access the ONDEMAND FOR ISERIES Main Menu. See Chapter 6 of the *IBM Content Manager OnDemand for iSeries Administration Guide*.
- Select option 4, MEDIA ADMINISTRATION MENU.
- Choose the appropriate option from this menu.
- You can also use the OnDemand Graphical Administration Tool, which is a plug-in for iSeries Navigator, to work with tape devices and volumes, and optical volumes and storage groups.

Define Storage Requirements in the Migration Policy Table

After setting up the media, enter the actual storage requirements for the archives in the migration policy table. Every report, object, or AnyStore archive must have a migration policy definition. The Report Management Cycle and Object Management Cycle store the items on the designated media, and keep them for the assigned length of time.

You can change your initial estimates for migration and retention requirements after OnDemand has collected historical data that is related to actual report usage statistics. After you have been using OnDemand for a period of time, you can run reports that will show you statistics about how frequently and during what time periods your end users are working with specific reports. See Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide* for instructions to generate reports of actual report usage.

To enter a report migration policy (which applies to Spool File Archive and AnyStore):

- Access the ONDEMAND FOR ISERIES Main Menu. See Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide*.
- Select option 1, REPORT ADMINISTRATION MENU.
- Choose Option 2.
- You can also use the OnDemand Graphical Administration Tool, which is a plug-in for iSeries Navigator, to enter a report migration policy.

To enter an Object Archive migration policy:

- Access the ONDEMAND FOR ISERIES Main Menu. See Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide* .
- Select option 2, OBJECTS ADMINISTRATION MENU.
- See Chapter 2 of the *IBM Content Manager OnDemand for iSeries Administration Guide* to determine which item to choose.

Multiple items can use the same migration policy name if the items have the same migration and retention characteristics.

Choose Report Retrieval Criteria

For Spool File Archive and AnyStore, each report <u>must</u> have a report definition, which defines how data is segmented and indexed. Quick retrieval of customer data is important to your business. Your users can help you determine which index values (keys) can be most beneficial in a report search. For example, in one type of report, searching by customer name can be most effective; in another, an address search provides the best results.

When you have decided which keys to use:
- Access the ONDEMAND FOR ISERIES Main Menu. See Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide*.
- Select option 1, REPORT ADMINISTRATION MENU.
- Choose Option 4.
- You can also use the OnDemand Graphical Administration Tool, which is a plug-in for iSeries Navigator, to enter a report definition.

Prepare Report Data for Definition

Before you can define a report, the spooled file containing the report data must be copied into a physical file. This allows you to see all print lines in the spooled file to determine line and column locations for the data you want to extract.

To create a physical file and then copy a spooled file into it:
- Access the ONDEMAND FOR ISERIES Main Menu. See Chapter 1 of the *IBM Content Manager OnDemand for iSeries Administration Guide*.
- Select option 1, REPORT ADMINISTRATION MENU.
- Select Option 20.
- Choose the appropriate options from this menu.
- You can also use the OnDemand Graphical Administration Tool, which is a plug-in for iSeries Navigator. This tool includes a locate function which helps you to determine line and column locations for the data you want to extract.

Determine Preferred User Interface

For Spool File Archive, users can access archived reports either from the screen that is shown in Chapter 8 of the *IBM Content Manager OnDemand for iSeries Administration Guide*, or from their existing applications. See Appendix A of the *IBM Content Manager OnDemand for iSeries Administration Guide* for details about the OnDemand APIs to add OnDemand to your users' applications. You can also use the OnDemand Client to provide a graphical user interface to access archived reports. See Chapter 5 of the *IBM Content Manager OnDemand for iSeries Administration Guide* for details about the OnDemand Client/Server feature.

Sample Customization Chart for Reports

Use this chart to help you set standards for current and future report processing. You can complete one for each report and place them all in a notebook. You can distribute a notebook to each end user as a reference tool, and include a copy of Chapter 8 of the *IBM Content Manager OnDemand for iSeries Administration Guide*.

Table 2. Report Definition for: Invoices

Attribute	Assignment	Notes
Report name:	INVOICE	
Media:	Disk	
Migration to:	Optical	
Migration timeframe:	30 days	
Expiration:	7 years	Legal requirement
Segmentation:	segment when acct # changes	
Key 1:	123-4567	Account number
Key 2:	ABC Company	Company name
Key 3:	Jane Doe	Purchasing agent
Key 4:	1-800-BUY OURS	Jane's Phone #
Key 5:		
Report Group:	INVINFO	Invoice info
Migration Policy:	ABCCOLL	
Report Overlay:	Invoice	

A blank form is provided immediately following this paragraph.

Table 3. Report Definition for:

Attribute	Assignment	Notes
Media:		
Migration to:		
Migration timeframe:		
Expiration:		
Segmentation:		
Key 1:		
Key 2:		
Key 3:		
Key 4:		
Key 5:		
Report Group:		
Migration Policy:		
Report Overlay:		

Appendix A. OnDemand HFS-to-IFS Data Conversion

Attention:

This section only pertains to a user that upgrades to Version 5 Release 2 from releases prior to Version 4 Release 2 of OnDemand.

General Description

IBM updated the OnDemand Spool File Archive feature to use the **Integrated File System** for all disk-resident report text and related objects. Prior to V4R2, OnDemand used the **Hierarchical File System (HFS)** to store reports as document library objects (DLOs) in OS/400 folders. The **Integrated File System** provides support for newer methods for information processing. These processing methods include items such as client and server computing, open systems, and multimedia. The many **benefits** that are provided by the **Integrated File System** include the following items.

- Faster access to various OS/400 data types.
- Efficient handling of data stream files, such as text and graphics.
- Better affinity with graphical user interfaces.

For OnDemand, changing to the **Integrated File System** provides the following **benefits**:

- Better organization for archived data.
- Faster access to and manipulation of archived data.
- Removal of some limitations inherent in the older **Hierarchical File System (HFS)**.

The change to **Integrated File System** is completely transparent to most users of OnDemand. The file system changes do affect some administrative functions such as save and restore operations. With the older HFS, disk-resident report texts store in folders within the Document Library Services file system (QDLS). The **access path** for such reports (in **HFS**) looked like this:

/QDLS/INV001##.##/19961024.001

where "INV001" is the report definition name, and the actual report text object uses the name "19961024.001".

With the **Integrated File System**, the **access path** for that same report will be:

/QIBM/UserData/RDARS/SpoolFile/INV001/19961024.001

where all of the path entries that precede the report text object ("19961024.001") are directories in the "root" file system. Notice that the report directory name is the report definition name, without adding # characters as there was in the old HFS folder name. (The renaming of OnDemand authorization lists occur in this same way, so that the authorization list for each report has the same name as the report definition.)

These directories are structured and used in a way that is similar to and is already familiar to users of all DOS-based PC systems. The advantage of directories is the

ability to backup at any level in the structure. For example, all of the OnDemand report directories and their contents back up to tape by the following IFS command:

```
SAV  DEV('QSYS.LIB/tape-id.DEVD')
OBJ('/QIBM/UserData/RDARS/SpoolFile/*
```

Where "tape-id" is the name of the tape device.

Conversion General Information

Before running the **HFS to IFS conversion**, you should backup the library **QUSRRDARS** and all of the OnDemand folders.

Then run the IFS data conversion process that is described in detail in these instructions. If you are coming from a previous version of R/DARS or OnDemand, you must start this data conversion process for OnDemand to function properly. In general, this conversion moves all DASD-resident archived reports from the old HFS folders to the new IFS directories.

There are four steps in this conversion process:

1. Create the new OnDemand directories in the "root" file system which the **Integrated File System** uses. This step also renames the existing OnDemand authorization lists.
2. Move all archived reports which are still disk-resident from the old HFS folders to the new directories. Archived reports which have been migrated to optical or tape, and the indexes for all archived reports, are not affected by the conversion process.
3. Clear the "moved" status which became posted during step 2 in the stored reports file (QARLRSRT) records.
4. Delete the old HFS folders.

Each of the conversion steps that are listed above has a set of very detailed instructions in each of the numbered sections which follow. Each of these sections covers the following concerns:

- Any required preparations.
- Descriptions of the functions performed and how to run the program.
- Information that is needed for error checking.
- Description on how to rerun the step if necessary.

General Instructions and Prerequisites

BEFORE YOU BEGIN the actual data conversion, the following items are VERY IMPORTANT issues and prerequisites which will affect the entire conversion process. Please READ these instructions before performing any part of the **Integrated File System** changes. Address any questions BEFORE you begin.

- ASSUMPTION: Everything in this data conversion process is designed, written, and tested with the following assumptions.
  - That the OnDemand installation is "normal".
  - The installation contains all shipped files and other objects in place
  - The normal security structure and relationships remain maintained.

If you have changed anything, seek advice from the OnDemand support group BEFORE you attempt to use these data conversion programs.

- BACKUP OnDemand before you install the **Integrated File System** changes. This is extremely important because there is no ability within the conversion programs to ″go back″ or to reverse the HFS-to-IFS conversion process.

  SAVDLO will backup all OnDemand folders and their contents. Please refer to paragraph 35 below for further details and suggestions on using SAVDLO.

  Before you run the HFS to IFS conversion, make a current backup of the library **QUSRRDARS**. Use **SAVLIB** or **SAVOBJ** to backup **QUSRRDARS**.

  In general, your only complete recovery option will be the restoration of the backups that are made before the entire process was started. Please refer to paragraph 35 below for further details and suggestions on the backup process.

  IMPORTANT NOTE ON ″UNDOING″ AUTHORIZATION LIST CHANGES: If the ″CREATE DIRECTORIES″ step has run, consult with OnDemand support personnel regarding the process of resetting the authorization list names that were changed. This is true, whether the ″CREATE DIRECTORIES″ step ran partially or completely. Do this under the following conditions:
  - BEFORE restoring the old contents of the QUSRRDARS library.
  - BEFORE changing the QARLRACT file that is used by QRLRIDCCD program.

  This is because the contents of the QARLRACT file will be needed to guide the resetting of the names of any authorization lists which have been changed. DO NOT restore authorization list backups; DO NOT run RSTAUT to ″undo″ the changes!
- DO NOT USE OnDemand during the conversion process. Each of the conversion steps attempts to make sure that OnDemand is not in use before it runs, but there is no ″lock out″ enforced between steps. In particular, if reports archive into OnDemand, or the report management cycle runs during the conversion process, archived data will be lost. Further, this will change an easy, straightforward, and ″almost automatic″ process into an unpredictable mess.
- FOLLOW THE INSTRUCTIONS very carefully. Each step is described in detail, with explicit information on analyzing errors and how to restart. At each step, it is important that you not proceed until you are sure of the following things.
  - That the previous step completed.
  - That the previous step was checked carefully.
  - Rerun the previous step as necessary.

  For example, if step 1 is incomplete, and some new report directories are missing, then step 2 will not move text objects into the missing directories. Likewise, running step 3 to clear the ″moved flags″ before step 2 is checked and rerun if necessary prevents step 2 from rerunning without errors.
- CHECK FOR ERRORS after running each step of the data conversion process. Each step provides return codes and the number of converted objects as a general guide; detailed status messages post to the joblog. Do not ignore any exceptions such as ″(move of) text that is failed″ with a count greater than zero. These exceptions and information on analysis and recovery from various error conditions that are described in the detailed instructions which follow.

Create Directories

Preparation
- Be very sure that you have a good, current BACKUP of all OnDemand HFS folders. A SAVDLO command with DLO(*ALL) and FLR(*ANY) parameters will backup all of the folders and their contents. To back up only the folders that are created by OnDemand, use this command:

SAVDLO DLO(*SEARCH) SRCHTYPE(*ALL) DEV(tpid) OWNER(QRDARS400)

Where "tpid" is the name of the tape device. Restricting the scope of this backup operation may save a lot of time if you have many non-OnDemand folders.

- Make backup copies of the OnDemand QUSRRDARS library. As recommended in the "GENERAL INSTRUCTIONS AND PREREQUISITES" section above, a backup to these libraries should exist before installing the **Integrated File System** changes. If one does not exist, make a backup copy of the QUSRRDARS library now.
- Make sure that no one is using or will use any OnDemand functions.

Process

- Sign on using either the QSECOFR user profile or using a profile that has "*ALLOBJ" authority.
- Add the QRDARS library to the library list.
- Run the "create directories" program QRLRIDCCD by entering ONE of these commands:

SBMJOB CMD(CALL PGM(QRLRIDCCD) PARM(' '))
CALL PGM(QRLRIDCCD) PARM(' ')

It is preferable to use the SBMJOB command to run the program in batch. The program really is a "batch job", and the printed joblog will be smaller if QRLRIDCCD runs as a batch job. To run the program interactively, ensure that the interactive job time out interval, that is specified in system value QINACTITV, was changed to *NONE. This will ensure that the program runs to completion.

- Program QRLRIDCCD will perform the following functions:
  1. It verifies the job environment and user's authority.
  2. ALL required directories in the "fixed path" (/QIBM/UserData/RDARS), the "component" directory (/SpoolFile), and creates the initial "path-level" directories (/001/001) if not present. If already present, verification of ownership and authority controls occurs.
  3. The program creates all "report directories" for the **Integrated File System**, (which correspond to the old HFS folders). It creates one "report directory" for each unique value of the field 'CDTYPE' in QARLRACT records. Each new report directory has name = 'CDTYPE' value, without added #'s as with HFS folder/autl names.
  4. The program creates a symbolic link for each new report directory. This symbolic link establishes a correspondence with the **Integrated File System** path (directories) that were used when creating the report directory. Thus, an apparent or logical path such as "/QIBM/UserData/RDARS/Spoolfile/CHECKSTMTS" is linked to the actual path "/QIBM/UserData/RDARS/ SpoolFile/001/004/CHECKSTMTS". (The extra levels in the actual IFS directory path are necessary to assure acceptable performance when using **Integrated File System**.)
  5. Rename existing authorization lists. Authorization list "INVOICE###" changes to "INVOICE", or to "INVOICEn" (n=1-9) if an "INVOICE" authorization list already exists.
  6. The new name of the authorization list and the "level directory" names that are used (for example, "001/015") store in the fields 'SECEXITLIB' and 'SECEXIT' respectively. Locate these fields in the QARLRACT record.

7. Create any required "/AFP_Resources" directories within the report directories. This is true provided the report data type (in QARLRACT record) is "*AFPDS" or if an old "AFPRSC" sub-directory exists in the HFS file system.

Error Analysis

- Should someone else be using OnDemand, or if you do not have the required authority for the program, an escape message is received almost immediately.

- If the program runs normally and reaches an end-of-file condition for the QARLRACT file, summary data displays in the form that is shown and explained below. If this message does not appear, check the joblog to find the errors.

- When the program ends, it will produce a CPF9898 completion message which has text that begins with the words "QRLRIDCCD COMPLETED: ACT RECS = ..." This summary status message will always appear in the joblog, and the program will always print a joblog. The "QRLRIDCCD COMPLETED" message displays at the workstation if the program runs interactively. The workstation receives a "batch job-completed" message if the program runs in batch. The "QRLRIDCCD COMPLETED..." completion message contains the following status information and accumulated values:

END STATUS = XXXXXXX
This "return code" value indicates that QRLRIDCCD read all records in file QARLRACT ("ACT-EOF"), or gives the reason why it stopped early:

SRT-IN-USE
Someone else was using OnDemand.

AUTH-ERR
Insufficient authority to run QRLRIDCCD.

NODIR-xxxx
Indicated directory could not be created.

ERROR-CDIR
Error in called program QRLCDIR.

ERROR-SVA
Error in called program QRLRIDCSVA.

ACT-EOF
Reached end-of-file in QARLRACT (normal status).

ACT LIB = XXXXXXXXX
The library that contains the ACT file actually used & that is updated by QRLRIDCCD. (This will normally be library QUSRRDARS.)

ACT RECS = nnnnnn
This is the total number of QARLRACT records that are read by the program. This number should match the total number of records in the file QARLRACT in library specified as "ACT LIB".

ACT DUPS = nnnnnn
This is the number of QARLRACT records having 'CDTYPE' (report name) values which are not unique. That is, for each report which has multiple versions defined, all but the first are "duplicates". Multiple versions of a report store in the same folder or directory.

ACT SKIPS = nnnnnn
This is the number of QARLRACT records that are not used to trigger creation of a report directory. If the report data type is "UBND", a directory

will not exist. Also, if the authorization list which secures the report's HFS folder is missing, the ACT record was skipped.

AUTL ERRORS = nnnnnn
> This is the number of OnDemand authorization lists that were not successfully renamed (see the explanation in paragraph above). This value should always be zero. If not, this is the number of the authorization lists were not renamed, so the corresponding report directories were not created. Check the job log for a CPF9898 message which gives more details on such an error.

DIR CREATED = nnnnnn
> This is the number of new created report directories. Each one of these "successful creates" has a detailed entry in the joblog.

DIR EXISTED = nnnnnn
> This is the number of new report directories which that were not created because they already existed. This number should match the number of directories that are created by prior runs of this program if this is a rerun. However if this is the first run, this value should be zero.

DIR FAILED = nnnnnn
> This is the number of attempts to create new directories which failed. This number should always be zero; if not, look for the error causes in specific entries (most likely CPFA0xx messages) in the joblog. (In general, these values that are listed above should balance, with (ACT RECS minus ACT DUPS minus ACT SKIPS) = (DIR CREATED plus DIR EXISTED). Both AUTL ERRORS and DIR FAILED should be zero.)

LINK CREATED = nnnnnn
> This is the number of new created symbolic links. Each one of these "successful creates" has a detailed entry in the joblog.

LINK EXISTED = nnnnnn
> This is the number of report symbolic links that were not created because they already existed. This number should match the number of links that are created by all prior runs of this program if this is a rerun. However, if this is the first run, this value should be zero.

LINK FAILED = nnnnnn
> This is the number of attempts to create symbolic links which failed. This number should always be zero; if not, look for the error causes in specific entries (most likely CPFA0xx messages) in the joblog.

AFP CREATED = nnnnnn
> This is how many "/AFP_Resources" subdirectories were created. This subdirectory is created if the ACT record has report data type = "*AFPDS" or "*AFPDSLINE", or if the old "/AFPRSC" sub-folder exists. Each of these "successful creates" has a detailed entry in the joblog.

AFP EXISTED = nnnnnn
> This is the number of needed "/AFP_Resources" directories were not created because they already existed. This number should match the total of AFP directories that were created by prior runs of this program if this is a rerun.

AFP FAILED = nnnnnn
> This is the number of attempts to create AFP directories which failed. This number should always be zero; if not, look for the error causes in specific entries (most likely CPFA0xx messages) in the joblog.

- One more required check remains. Check the numbers from the end-of-job summary message and examine the joblog. Also, this step requires comparing

the old HFS folders with the new "root" file system directories. The HFS folders and their contents can be checked with WRKFLR; the new directory structures, which are still empty of any report objects, can be checked with WRKLNK.

Error Recovery

The recovery process for QRLRIDCCD is to simply re-run the program after correcting any error conditions). If an interruption to the program occurs, you can rerun it without making any changes. Re-running the program will obviously affect the various "...EXISTED" and "...CREATED" totals that are described above. ALWAYS SAVE THE JOBLOGS from each run of **QRLRIDCCD** to help locate any problems. **IMPORTANT NOTE:** If this step has been run, consult with OnDemand support personnel regarding the process of resetting the authorization list names that have changed. This is true, whether the step ran partially or completely. Do NOT restore authorization list backups!

Move Reports

Preparation

- You should have already performed your backups of OnDemand. If not, DO NOT PROCEED without creating the backup copies. Make these copies as described in the section named "GENERAL INSTRUCTIONS AND PREREQUISITES" above and in paragraphs 35 and 36 above. This conversion step will remove report text objects from the HFS folders and change the file QARLRSRT. Without these backups, you can NOT REVERSE these changes.

- Make sure that the previous step, "CREATE DIRECTORIES", ran successfully. Any directories which are missing because of errors in that step will cause more errors in this step.

  CAUTION:
  If using an alternate QARLRACT file for the previous step, look for any differences between that file and the QARLRACT file in QUSRRDARS. Resolve any differences that are found before running this step. The file that is used for the "CREATE DIRECTORIES" step was updated. Additionally, the information that is added to that copy of QARLRACT is critical: R/DARS will not work correctly without it. When that copy of QARLRACT moves or copies into the QUSRRDARS library, any changes that are made to the replaced file in QUSRRDARS become lost.

- Make sure that no one is using or will use any OnDemand functions.

Process

- Sign on using either the QSECOFR user profile or using a profile that has "*ALLOBJ" authority.
- Add the QRDARS library to the library list.
- Run the "move reports" program QRLRIDCMOV by entering ONE of these commands:

  SBMJOB CMD(CALL PGM(QRLRIDCMOV) PARM(' '))
  CALL PGM(QRLRIDCMOV) PARM(' ')

  It is preferable to use the SBMJOB command to run the program in batch. The program really is a "batch job", and the printed joblog will be smaller if QRLRIDCMOV runs as a batch job. To run the program interactively, make sure that the interactive job time out interval, that is specified in system value QINACTITV, is changed to *NONE. This ensures that the program runs to completion.

- Program QRLRIDCMOV will perform the following functions:
  1. Read all records in QARLRSRT file which have 'WHERE' = "D" (report text object is in HFS folder on DASD).
  2. For each of these selected SRT records:
     - Move archived report text from the HFS folder to the new directory in the "root" file system.
     - Check for a corresponding object name in the "/AFPRSC" subdirectory. (Either the subdirectory or the AFP resources object may not exist. This check is performed for all report objects.) If an AFP resource object is found, move it to the new "/AFP_Resources" subdirectory.
  3. Change 'WHERE' value in the SRT record to "M" (= "Moved"). (This update allows this program to select "unmoved" records in the event of an interruption and restart. Additionally. When it is rerun, it allows moving reports after initial finding and correcting of errors.)

Error Analysis

- Should someone else be using OnDemand, or if you do not have the required authority for the program, an escape message generates almost immediately.
- Running the program by selecting and processing records from the QARLRSRT file displays a summary message in the form that is shown and explained below. If this message does not appear, check the joblog to find the errors.
- When the program ends, it will produce a CPF9898 completion message which has text that begins with these words: "QRLRIDCMOV COMPLETED: ..." This summary status message will always appear in the joblog, and the program will always print a joblog. The "QRLRIDCMOV COMPLETED" message displays at the workstation if the program runs interactively. The workstation receives a "batch job-completed" message if the program runs in batch. The "QRLRIDCMOV COMPLETED..." completion message contains the following summary information:

SRT STATUS = xx...x
  This is the "file input/output" status for QARLRSRT when the primary processing program within this job ended. Possible values are:

SRT-EOF
  The normal condition, that indicates that all selected records were read and processed.

SRT_ERROR
  Indicates a likely file access or input/output error; this condition must be investigated and corrected.

SRT RECS = nnnnn
  This is the total number of QARLRSRT records that are read by the program. This number should match the total number of records in the file QARLRSRT in library QUSRRDARS. These files contain the field 'WHERE' = "D" for "disk-resident". Archived reports on tape or optical media remain unaffected by this conversion process.

TXT MOVED = nnnnn
  This is the number of report text objects which were moved. Each one of these "successful moves" has a detailed entry in the joblog. In a perfect conversion, TXT MOVED = SRT RECORDS. If not, investigate the failures until you understand why they occurred and can either accept or correct the errors.

TXT FAILED = nnnnn

This is the number of attempts to move a report object which failed. This number should always be zero; if not, look for the error causes in specific entries (most likely CPFA0xx messages) in the joblog.

AFP NOT FND = nnnnn

This is the number of report text objects that are processed which had no corresponding AFP resource objects. It is normal for this number to be very large if you have many archived reports which are not AFPDS.

AFP MOVED = nnnnn

This is the number of AFP resource objects that were moved to "/AFP_Resources" subdirectories within the new report directories. Each archived AFPDS report object should have one of these AFP resource objects. Each of these "successful moves" has a detailed entry in the joblog.

AFP FAILED = nnnnn

This is the number of attempts to move AFP resources which failed. This number should always be zero; if not, look for the error causes in specific entries (most likely CPFA0xx messages) in the joblog.

- One more required check remains. Check the numbers from the end-of-job summary message and examine the joblog. Also, this step involves comparing the old HFS folders with the new "root" file system directories. The HFS folders and their contents can be checked with WRKFLR; the new directory structures, which are still empty of any report objects, can be checked with WRKLNK. The old AFP resource objects that are stored in the "/AFPRSC" sub-directory within the report folder. The moved AFP resource objects store in the "/AFP_Resources" sub-directory within the new report directory.

Error Recovery

The recovery process for QRLRIDCMOV is to simply re-execute the program after correcting any error conditions. If an interruption to the program occurs, you can rerun it without making any changes. Re-running the program will obviously affect the various "...MOVED" totals that are described above, because only "unmoved" reports are selected from the QARLRSRT file. The "M" value placed into the 'WHERE' field is a temporary marker which enables efficient restart and rerun capabilities for this part of the data conversion process. It is VERY IMPORTANT that running step 3 below does not clear these values. Run this step as many times as necessary to move all report objects to the new directories. ALWAYS SAVE THE JOBLOG from each run of **QRLRIDCMOV** to help locate any problems.

Clear "Moved" Status

Preparation

- Make SURE that the previous step, "MOVE REPORTS", completed successfully. The "M" value which the QRLRIDCMOV program put into the 'WHERE' field is a temporary marker. This marker enables efficient restart and rerun capabilities for that part of the data conversion process. It is VERY IMPORTANT NOT to clear these values by running this step. Run the prior step as many times as necessary to move all report objects to the new directories.
- Make sure that no one is using or will use any OnDemand functions.

Process

- Sign on using either the QSECOFR user profile or using a profile that has "*ALLOBJ" authority.
- Add the QRDARS library to the library list.

- Run the "clear moved status" program QRLRIDCCLM by entering ONE of these commands:

  SBMJOB CMD(CALL PGM(QRLRIDCCLM) PARM(' '))
  CALL PGM(QRLRIDCCLM) PARM(' ')

  It is preferable to use the SBMJOB command to run the program in batch. The program really is a "batch job", and the printed joblog will be smaller if QRLRIDCCLM runs as a batch job.
- Program QRLRIDCCLM clears all of the "moved" flags. It does this by changing all "M" (= "moved") values in the 'WHERE' fields in QARLRSRT back to "D" (= "disk-resident"). When each corresponding report text object moved to a report directory in the "root" file system, this field's value changed to "M" (= "moved"). After completing these moves, change these temporary values back to "D" (= "disk-resident"). All other values in this field ("O" = optical, "T" = tape, "D" = disk) are not changed.

Error Analysis

- Should someone else be using OnDemand, or if you do not have the required authority for the program, an escape message generates almost immediately.
- Running the program by selecting and processing records from the QARLRSRT file will display a summary message in the form that is shown and explained below. If this message does not appear, check the joblog to find the errors.
- When the program ends, it will produce a CPF9898 completion message which has text that begins with these words: "QRLRIDCCLM COMPLETED: ..." This summary status message will always appear in the joblog, and the program will always print a joblog. The "QRLRIDCCLM COMPLETED" message displays at the workstation if the program runs interactively. The workstation receives a "batch job-completed" message if the program runs in batch. The "QRLRIDCCLM COMPLETED..." completion message contains the following summary information:

  SRT STATUS = xx...x
  This is the "file input/output" status for QARLRSRT when the primary processing program within this job ended. Possible values are:

  SRT-EOF
  The normal condition, that indicates that all selected records were read and updated.

  ERROR
  Probably indicates a file access or input/output error; this condition must be investigated and corrected. Check the joblog.

  SRT_OPNERR
  Indicates that the program was unable to open QARLRSRT; investigate and correct this condition. Check the joblog.

  SRT_UPDERR
  Probably indicates an error detected during an SQL update; investigate and correct this condition. Check the joblog.

  SRT RECORDS UPDATED = nnnnn
  This is the total number of processed QARLRSRT records. This number should match the total number of records in the file QARLRSRT in library QUSRRDARS which were found with 'WHERE' = "M" for "Moved". This

number should also match the cumulative total of the "TXT MOVED" values for all runs of the previous step. (Step 2, "MOVE REPORTS", that is described above).

– Check the results of this step, beyond checking the numbers from the end-of-job summary message and examining the joblog, by completing the following steps.

- Compare the total number of reports moved in all runs of the "MOVE REPORTS" step (#2 above)

- Compare the number of "SRT RECORDS UPDATED" by this step.

Error Recovery

The recovery process for QRLRIDCCLM is to simply re-execute the program after correcting any error conditions. If an interruption to the program occurs, you can rerun it without making any changes. Re-running the program will obviously affect the "SRT RECORDS UPDATED" total that are described above. ALWAYS save the joblog from each run of **QRLRIDCCLM** to help locate any problems.

Delete HFS Folders

Preparation

• Make SURE that step 2, "MOVE REPORTS", completed successfully.

• Make sure that no one is using or will use any OnDemand functions.

Process

• Sign on using either the QSECOFR user profile or using a profile that has "*ALLOBJ" authority.

• Add the QRDARS library to the library list.

• Run the "delete HFS folders" program QRLRIDCDF by entering ONE of these commands:

SBMJOB CMD(CALL PGM(QRLRIDCDF) PARM(' '))
CALL PGM(QRLRIDCDF) PARM(' ')

It is preferable to use the SBMJOB command to run the program in batch. The program really is a "batch job", and the printed joblog will be smaller if QRLRIDCMOV runs as a batch job. To run the program interactively, make sure that the interactive job time out interval, that is specified in system value QINACTITV, has been changed to *NONE. This ensures that the program runs to completion.

• Program QRLRIDCDF removes the old OnDemand folders in the HFS (/QDLS) file system, including any sub-folders which may exist within those report folders. Any folder that is not empty cannot be deleted remains on the system. Thus, any report text that does not move to a new directory by the "MOVE REPORTS" step (step 2, above) will not be destroyed. The original text object will remain on the system in its original HFS folder.

Error Analysis

• Should someone else be using OnDemand, or if you do not have the required authority for the program, an escape message generates almost immediately.

• Running program that uses records from QARLRACT to find and delete HFS folders displays a summary message in the form that is shown and explained below. If this message does not appear, check the joblog to find the errors.

• When the program ends, it will produce a CPF9898 completion message which has text that begins with these words: "QRLRIDCDF COMPLETED: ..." This

summary status message will always appear in the joblog, and the program will always print a joblog. The ″QRLRIDCDF COMPLETED″ message displays at the workstation if the program runs interactively. The workstation receives a ″batch job-completed″ message if the program runs in batch. The ″QRLRIDCDF COMPLETED...″ completion message contains the following summary information:

ACT RECS = nnnnn
This is the total number of QARLRACT records that are read by the program. This number should match the total number of records in the file QARLRACT in library QUSRRDARS.

ACT DUPS = nnnnn
This is the number of QARLRACT records having 'CDTYPE' (report name) values which are not unique. That is, for each report which has multiple versions defined, all but the first are ″duplicates″. Multiple versions of a report store in the same folder or directory.

ACT SKIPS = nnnnn
This is the number of QARLRACT records that are not used to trigger an attempt to delete a folder. If the report data type is ″UBND″, the ACT record has no corresponding HFS folder.

FLDRS DELETED = nnnnn
This is the number of deleted HFS report text folders. Each of these ″successful deletes″ has a detailed entry in the joblog.

FLDRS LEFT/NF = nnnnn
This is the number of non-deleted HFS folders. The folders remained non-deleted due to one of the following reasons:

– No folders were not found in the HFS file system.
– The folder itself or one of its sub-folders was not empty.

AFP DELETED = nnnnn
This is the number of deleted ″/AFPRSC″ sub-directories. Each of these ″successful deletes″ has a detailed entry in the joblog.

AFP LEFT/NF = nnnnn
This is the number of ″/AFPRSC″ subfolders that WERE NOT deleted because of an unanticipated error or because the ″/AFPRSC″ subfolders were not empty. Check the joblog for details.

IDX DELETED = nnnnn
This is the number of deleted ″/INDEXES″ subfolders. If a report index has ever been migrated to tape or optical, this subfolder will exist within the HFS report folder. All of these should be empty, and so be deleted successfully. These ″successful deletes″ have a detailed entry in the joblog.

IDX LEFT/NF = nnnnn
This is the number of ″/INDEXES″ subfolders that WERE NOT deleted because of an unanticipated error or because the ″/INDEXES″ subfolder was not empty. Check the joblog for details. In general, handle this error by deleting any objects in the ″/INDEXES″ subfolder. (Note: This is true for disk-resident ″/INDEXES″ objects only; do NOT delete any of these objects within ″/INDEXES″ sub-directories on optical media.)

– One more required check remains. Check the numbers from the end-of-job summary message and examine the joblog. This involves checking the old HFS folders which remain on the system. Use the WRKFLR command.

Error Recovery

The recovery process for QRLRIDCDF is to simply re-execute the program after correcting any error conditions. If an interruption to the program occurs, you can rerun it without making any changes. Re-running the program will obviously affect the various totals in the completion message that are described above. ALWAYS save the joblog from each run of **QRLRIDCDF** to help locate any problems.

Appendix B. Considerations when Deleting OnDemand from Your System

This appendix lists objects that remain after an OnDemand feature is deleted using the *Delete Licensed Program (DLTLICPGM)* command for licensed program **5722-RD1**. These objects may be deleted if you are permanently deleting OnDemand from your system. If you delete these objects, you will lose the ability to find any of your data on tape or optical even though you still have your physical media (tape volumes or optical volumes). Even if you reinstall the OnDemand product, you will not be able to access the data on this media.

Base Feature

Table 4. Objects that remain after DLTLICPGM:

Object	Type	Library
QRDARS400	*USRPRF	QSYS
QRDARS4001	*USRPRF	QSYS
QRDARS4002	*USRPRF	QSYS
QRDARS4003	*USRPRF	QSYS
QRDARS4004	*USRPRF	QSYS
QRDARS4005	*USRPRF	QSYS
QRDARSADM	*USRPRF	QSYS
QRDARS400	*AUTL	QSYS
QRDARSADM	*AUTL	QSYS

Table 5. Objects that remain after DLTLICPGM:

Object	Type	Library
QARLCOARC	*FILE	QUSRRDARS
QARLCOVOL	*FILE	QUSRRDARS
QARLCOVOLL	*FILE	QUSRRDARS
QARLCSTGG	*FILE	QUSRRDARS
QARLCTARC	*FILE	QUSRRDARS
QARLCTDEV	*FILE	QUSRRDARS
QARLCTDEVL	*FILE	QUSRRDARS
QARLCTVOL	*FILE	QUSRRDARS
QARLCTVOLL	*FILE	QUSRRDARS
QSAMPLES	*FILE	QUSRRDARS
QRLCJRN	*JRN	QUSRRDARS
QRLCJRxxxx	*JRNRCV	QUSRRDARS

where xxxx can be any number from 0001 to 9999 depending on how many journal receivers have been automatically created by OnDemand.

Spool File Archive Feature

Table 6. Objects that remain after DLTLICPGM:

Object	Type	Library
QARLRACT	*FILE	QUSRRDARS
QARLRACTG	*FILE	QUSRRDARS
QARLRACTL	*FILE	QUSRRDARS
QARLRACTR	*FILE	QUSRRDARS
QARLRACTV	*FILE	QUSRRDARS
QARLRANN	*FILE	QUSRRDARS
QARLRAPP	*FILE	QUSRRDARS
QARLRAUDIT	*FILE	QUSRRDARS
QARLRCOL	*FILE	QUSRRDARS
QARLRFOT	*FILE	QUSRRDARS
QARLRIN	*FILE	QUSRRDARS
QARLRLV	*FILE	QUSRRDARS
QARLRNQ	*FILE	QUSRRDARS
QARLRPOP	*FILE	QUSRRDARS
QARLRPRT	*FILE	QUSRRDARS
QARLRRSC	*FILE	QUSRRDARS
QARLRSEC1	*FILE	QUSRRDARS
QARLRSEC2	*FILE	QUSRRDARS
QARLRSEC3	*FILE	QUSRRDARS
QARLRSEC4	*FILE	QUSRRDARS
QARLRSEC5	*FILE	QUSRRDARS
QARLRSRT	*FILE	QUSRRDARS
QARLRSRTC	*FILE	QUSRRDARS
QARLRSRTCD	*FILE	QUSRRDARS
QARLRSRTRL	*FILE	QUSRRDARS
QARLRSRTSL	*FILE	QUSRRDARS
QARLRSRTSQ	*FILE	QUSRRDARS
QARLRxxxPF	*FILE	QUSRRDARS
QARLRxxx1	*FILE	QUSRRDARS
QARLRxxx2	*FILE	QUSRRDARS
QARLRxxx3	*FILE	QUSRRDARS
QARLRxxx4	*FILE	QUSRRDARS
QARLRxxx5	*FILE	QUSRRDARS
QARLRxxx6	*FILE	QUSRRDARS

where xxx can be any 1 to 3 alphanumeric characters. Every system will have at least 1 set of these files with xxx set equal to 000. If you are using Report Groups, you will have additional sets of files where xxx is your *Group abbreviation*.

Table 7. Objects that remain after DLTLICPGM:

Object	Type	Library
ERROR	*OUTQ	QUSRRDARS
PROCESSED	*OUTQ	QUSRRDARS
QRDARS400	*OUTQ	QUSRRDARS

Table 8. Objects that remain after DLTLICPGM:

IFS directory
/QIBM/UserData/RDARS
/QIBM/UserData/RDARS/SpoolFile/...
/QIBM/UserData/RDARS/Recovery/...

Table 9. Objects that remain after DLTLICPGM:

Object	Type	Library
CHECKSTMTS	*AUTL	QSYS
MAPICS	*AUTL	QSYS
TSTSEQ	*AUTL	QSYS
xxxxxxxxxx	*AUTL	QSYS

where xxxxxxxxxx is the name of a user defined report that can be up to 10 characters. You will have one authorization list for every report you defined to OnDemand.

Table 10. Objects that remain after DLTLICPGM:

Object	Type	Library
QRLRDLOO	*DTAARA	QUSRRDARS
QRLRGLDEFS	*DTAARA	QUSRRDARS
QRLRIFSCNV	*DTAARA	QUSRRDARS
xxxxxxxxxx	*DTAARA	QUSRRDARS

where xxxxxxxxxx is the name of an OnDemand user's profile that contains default values and other values that are based on their use of OnDemand. You may have one data area for every user who retrieved reports within OnDemand.

Object Archive Feature

Table 11. Objects that remain after DLTLICPGM:

Object	Type	Library
QARLOAUDIT	*FILE	QUSRRDARS
QARLOCOL	*FILE	QUSRRDARS
QARLODET	*FILE	QUSRRDARS
QARLOOCT	*FILE	QUSRRDARS
QARLOODT	*FILE	QUSRRDARS
QARLOOMT	*FILE	QUSRRDARS
QARLOSOT	*FILE	QUSRRDARS
QARLOSOTC	*FILE	QUSRRDARS
QRLOIFSCNV	*DTAARA	QUSRRDARS

Table 12. Objects that remain after DLTLICPGM:

IFS directory
/QIBM/UserData/RDARS /QIBM/UserData/RDARS/Object/...

Record Archive Feature

Table 13. Objects that remain after DLTLICPGM:

Object	Type	Library
QARLAAUDIT	*FILE	QUSRRDARS

AnyStore Feature

No objects remain after AnyStore is deleted.

Client/Server Features

After deleting the Client/Server features, no objects remain.

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